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Research Article

TO STUDY THE DRUG UTILIZATION PATTERN OF ANTIBIOTICS IN POST-OPERATIVE PATIENTS IN THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY AT TERTIARY CARE TEACHING

DEEPA LATHA C[1], LALITYA B[2], VIJAYALAKSHMI G[3], VIJAYALAKSHMI G[1]

[1]Department of Pharmacology, Bhaskar General Hospital, Yenkapally, Ranga Reddy, Telangana, India. [2]Department of , Bhaskar Medical College, Yenkapally, Ranga Reddy, Telangana India. [3]Department of Obstetrics and Gynaecology, Bhaskar General Hospital, Yenkapally, Ranga Reddy, Telangana India. Email: cdeepalatha@gmail.com

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ABSTRACT

Objectives: The study is carried out to determine possible rational use of drugs in post-operative cases of obstetrics and gynecology.

Methods: It is a prospective observational study carried out in Department of Obstetrics and Gynecology, Bhaskar General Hospital after obtaining permission from the Institutional Human Ethics Committee. It is carried out on 50 patients of post-operative cases for duration of 2 months by obtaining their case sheet data. The prescriptions were assessed for patient's demographic data, antimicrobial preference, dose, duration, route of administration, categorization of drugs according to Food and Drug Administration (FDA), and rationality score as per the World Health Organization (WHO), prescribing indicators score as per the WHO.

Results: The average number of drugs per patient is three. The most frequently prescribed drugs were metronidazole (dose: 400 mg - TID; 100%), tinidazole (dose: 500 mg - BD; 90%), ceftriaxome (dose: 200 mg - BD; 100%), amoxicillin+clavulinic acid (dose: 625 mg - TID; 14%). The brand drugs used are 100%, generic drugs - 0%, essential drugs - 87.5%, non-essential drugs - 12.5%, and category B drugs - 100%

Conclusion: Drug use pattern is rational. All the drugs were prescribed according to FDA category B. Hence, we conclude that 20% of prescriptions were under polypharmacy and 80% were according to prescription indicator of the WHO.

Keywords: Food and Drug Administration, World Health Organization.

INTRODUCTION

Drug utilization research was defined by the World Health Organization (WHO) in 1977 as the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social drugs in the populations [1]. Principal aim of drug utilization research is to facilitate rational use of drugs in the population. This concept is intended to be flexible and adaptable to many different situations; exactly which drugs are regarded as essential remains a national responsibility [2]. Rational usage of antibiotics in postoperative patients reduces mortality in patients [3]. It is need of hour to ensure safe medication with minimal adverse drug reactions and to ensure proper dosage regimen [4]. The study is carried out to determine rational use of drugs, antibiotic usage pattern.

METHODS

It is a prospective observational study carried out in Department of Obstetrics and Gynecology, Bhaskar General Hospital for 2 months after obtaining permission from the Institutional Human Ethics Committee. It is carried out on 50 patients of post-operative cases by obtaining their case sheet data. The prescriptions were assessed for patient's demographic data, antimicrobial preference, dose, duration, route of administration, and categorization of drugs according to Food and Drug Administration (FDA) [5], rationality score as per the WHO, prescribing indicators score as per the WHO [6].

Inclusion criteria

Patients in the age group of 18 -60 years. That underwent major operative procedures.

Exclusion criteria

Patients who refused to give informed consent.

RESULTS

The highest percentage of patients was among age group 20-30 years 86%. Average number of drugs per patient is 3. The most frequently prescribed drugs were metronidazole (dose: 400 mg - TID; 100%), tinidazole (dose: 500 mg - BD; 90%), ceftriaxome (dose: 200 mg - BD; 100%), and amoxicillin+clavulinic acid (dose: 625 mg - TID; 14%). The brand drugs used are 100%, generic drugs - 0%, essential drugs - 87.5%, non-essential drugs - 12.5%, and category B drugs - 100% (Tables 1-10).

DISCUSSION

The present study mean age of patients undergoing surgery were among the age group 20-30 years, where as in the study carried out by Agarwal *et al*., was showing 33 years. The number of days prescribed per patient was 3 in our study, whereas in the above study the average number of

Table 1: Mean age of patients

20 years	20-30 years	30-40 years	>40 years
4 (8%)	43 (86%)	1 (2%)	2 (4%)

Table 2: Distribution of cases

Procedure	Total number of patients	Number of cases without antimicrobial use	Mean duration of therapy
LSCS	42	0	10.16
Tubectomy	9	0	7.7
Hysterectomy	2	0	9

LSCS: Lower segment cesarean section

Table 3: Prevalence of antimicrobial polytherapy

Procedure	Number of antimicrobials				
	0	1	2	3	>4
LSCS	0	0	0	33	9
Tubectomy	0	0	2	0	0
Hysterectomy	0	0	4	4	1

LSCS: Lower segment cesarean section

Table 4: Period before shifting from parenteral to oral

Procedure	0-3 days (parenteral)	3-6 days (oral)	6-9 days (oral)
LSCS	42	-	-
Tubectomy	9	-	-
Hysterectomy	2	-	-

LSCS: Lower segment cesarean section

Table 5: Percentage of drugs prescribed in brand and generic

Drugs	Percentage
Generic drugs	0
Brand drugs	100

Table 6: Drug prescription according to the WHO essential medical list

Drugs	N (%)
Essential drug	7 (87.5)
Non-essential drugs	1 (12.5)

Table 7: Drugs used in different categories

Category	Percentage of drugs
CAT A	0
CAT B	100
CAT C	0
CAT D	0
CAT X	0

prescriptions per patient was 4, which is almost in accordance with our study.

The average number of antibiotics prescribed is metronidazole (87.8%), ceftrioxome (39%), and ciprofloxacin (43%), whereas in our study, metronidazole (100%), tinidazole (90%) and ceftrioxome (100%), which shows that commonly prescribed drugs were metronidazole with decreased use of ciprofloxacin and ceftrioxome in their study. In our study, ciprofloxacin is not used.

In the study carried out by Divyashree *et al*., the generic use of drugs is by 29.4%, whereas brand drugs used were 70.6% which is in contrast with our study were 100% brand drugs and not generic drugs.

Essential drug list was considered 87.5% in our study, which is in accordance with another study where most of the drugs are from essential drug list. In our study, we used 100% category "B" drugs [7].

Table 8: Duration of antibiotic therapy

Duration (days)	LSCS	Tubectomy	Hysterectomy
0-5	0	0	0
5-10	27	7	1
10-15	10	2	1
>15	5	0	0

LSCS: Lower segment cesarean section

Table 9: Categorization of antibiotics

Antibiotic	Group
Metronidazole	Antiamoebic, antiamoebic
Tinidazole	Antiamoebic
Amikacin	Aminoglycoside
Ampicillin	Beta lactam, pencillin
Amoxicillin	Beta lactam, pencillin
Cefotaxim (O)	Beta lactam, cephalosporin 3rd gen
Cloxacillin	Beta lactam
Ceftriaxone	Beta lactam, cephalosporin 3rd gen
Levofloxacin	Flouroquinolone

Table 10: Rationality score

Procedure	Rational	Irrational
LSCS	27	6
Hysterectomy	2	0
Tubectomy	9	0

LSCS: Lower segment cesarean section

CONCLUSION

Hence, we conclude that drug use pattern is rational. All the drugs were prescribed according to FDA category B. 20% of prescriptions were under polypharmacy and 80% were according to prescription indicator of the WHO [8].

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